

## ABSTRACT OF THE DISCLOSURE

A composition containing polydisperse aminodextran polymer molecules is soluble in an aqueous solution at a concentration of 10 mg/ml. The molecules therein  
5 have a narrow size distribution characterized by an average molecule mean hydrodynamic diameter of greater than 115 nm, a polydispersity index of between 0.10 and 0.47, an average molecular weight (MW) greater than 3 million daltons, and an amine content of greater than 50 amines per molecule. Similar soluble  
10 compositions contain the polymer molecules with an average MW of greater than 7 million daltons. These compositions are useful in forming reagents by conjugation with proteins for labeling cells. Methods of making these compositions and reagents from conventional mixtures of aminodextran polymers involve fractionation on column chromatography.